CLAIMS

What is claimed is:

1   1.   A method comprising:

2   determining whether a predetermined policy followed by a first virtual

3   local area network (VLAN) is supported by a port of a networking device;

4   disallowing the port membership to the first VLAN if the port fails to support

5   the predetermined policy; and

6   allowing the port membership to the first VLAN if the port fails to support the

7   predetermined policy and the port constitutes a tag-only port.

1   2.   The method of claim 1 further comprising:

2   disallowing the port membership to the first VLAN if the port supports the

3   predetermined policy and is a current member of a second VLAN following the

4   predetermined policy.

1   3.   The method of claim 2 further comprising:

2   allowing the port membership to the first VLAN if the port supports the

3   predetermined policy and is not a current member of a second VLAN following the

4   predetermined policy.

1   4.   The method of claim 1, wherein the predetermined policy is associated

2   with untagged frames.

1   5.   The method of claim 1 further comprising:

2   determining whether a change of a tagging option of the port is requested; and

3   allowing the change in the tagging option from an untagged state to a tagged

4   state.

1   6. The method of claim 5 further comprising:

2   disallowing the change in the tagging option if the change in the tagging

3 option is from the tagged state to the untagged state and the port is a member of a

4 second VLAN following the predetermined policy.

1   7. The method of claim 6 further comprising:

2   allowing the change in the tagging option if the change in the tagging option is

3 from the tagged state to the untagged state and the port is not a member of the second

4 VLAN following the predetermined policy.

1   8. The method of claim 1 further comprising:

2   determining whether a change of a filtering option of the port is requested; and

3   allowing the change in the filtering option from a "Do Not Filter" state to a

4 "Do Filter" state.

1   9. The method of claim 8 further comprising:

2   disallowing the change in the filtering option if the change in the filtering

3 option is from the "Do Filter" state to the "Do Not Filter" state and the port is a

4 member of a second VLAN following the predetermined policy.

1   10. The method of claim 9 further comprising:

2   allowing the change in the filtering option if the change in the filtering option

3 is from the "Do Filter" state to the "Do Not Filter" state and the port is not a member

4 of the second VLAN following the predetermined policy.

1   11. A method comprising:

2   determining whether a selected port is a tag-only port;

3   allowing membership of the port to a first virtual local area network

4 (VLAN) if the selected port is a tag-only port;

5   determining whether a predetermined policy followed by the first VLAN is

6   supported by a port of a networking device;

7   disallowing the port membership to the first VLAN if the port fails to support

8   the predetermined policy and the selected port is a member of a second VLAN

9   following the predetermined policy; and

10   allowing the port membership to the first VLAN if the port supports the

11 predetermined policy and the selected port is not a member of the second VLAN

12 following the predetermined policy.

1   12.   The method of claim 11 further comprising:

2   disallowing the port membership to the first VLAN if the port supports the

3   predetermined policy and the selected port is a member of the second VLAN

4   following the predetermined policy.

1   13.   The method of claim 11, wherein the predetermined policy is

2   associated with untagged frames.

1   14.   The method of claim 11 further comprising:

2   determining whether a change of a tagging option of the port is requested; and

3   allowing the change in the tagging option from an untagged state to a tagged

4   state.

1   15.   The method of claim 14 further comprising:

2   disallowing the change in the tagging option if the change in the tagging

3   option is from the tagged state to the untagged state and the port is a member of a

4   second VLAN following the predetermined policy.

1   16.   The method of claim 14 further comprising:

2   disallowing the change in the tagging option if the change in the tagging

3   option is from the tagged state to the untagged state and the port is a member of the

4   second VLAN following the predetermined policy.

1   17.   The method of claim 14 further comprising:

2   disallowing the change in the tagging option if the change in the tagging option is

3   from the tagged state to the untagged state and the port is a member of the second

4   VLAN following the predetermined policy.

1   18.   The method of claim 8 further comprising:

2   disallowing the change in the filtering option if (i) the change in the filtering

3   option is from the "Do Filter" state to the "Do Not Filter" state, (ii) the port is a

4   member of a VLAN having a policy that fails to support untagged frames, and (iii) the

5   port is a member of a second VLAN following the predetermined policy.

1   19.   A networking device comprising:

2   a plurality of ports; and

3   a processing unit to control membership of at least one of the plurality of

4   ports to a policy-based virtual local area network (VLAN), the processing unit to

5   determine whether a predetermined policy followed by the policy-based VLAN is

6   supported by the at least one of the plurality of ports, and to allow the at least one

7   port of the plurality of ports membership to the policy-based VLAN if the at least

8   one port fails to support the predetermined policy and constitutes a tag-only port.

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1   20.   The networking device of claim 19, wherein the processing unit

2   further disallows the at least one port of the plurality of ports membership to the

3   policy-based VLAN if the at least one port fails to support the predetermined

4   policy.

1   21.   The networking device of claim 20, wherein the processing unit further

2   disallows membership to the policy-based VLAN if the port supports the

3   predetermined policy and is also a current member of another VLAN following the

4   predetermined policy.

1   22.   The networking device of claim 21, wherein the predetermined policy

2   is associated with untagged frames.

1   23.   The networking device of claim 19, wherein the processing unit further

2   determines whether a change of a tagging option of the at least one port is requested

3   and allows the change in the tagging option if the tagging option is changed from an

4   untagged state to a tagged state.

1   24.   The networking device of claim 23, wherein the processing unit further

2   disallows the change in the tagging option if the change in the tagging option is from

3   the tagged state to the untagged state and the at least one port is a member of another

4   VLAN following the predetermined policy.

1   25.   A program loaded in memory of a networking device for execution

2   therein, the program comprising:

3   a first subprogram to determine whether a predetermined policy followed

4   by the policy-based VLAN is supported by a port of a networking device;

5   a second subprogram to disallow the at least one port of the plurality of ports

6   membership to the policy-based VLAN if the at least one port fails to support the

7   predetermined policy; and

8   a third subprogram to allow the at least one port of the plurality of ports

9   membership to the policy-based VLAN if the at least one port fails to support the

10   predetermined policy and constitutes a tag-only port.